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KAMENSKA,
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Z/034/61/000/001/007/021
EO73/E535

AUTHORS: Mazanec, Karel, Engineer, Candidate of Technical Sciences
and Kamenská, Emilie, Engineer

TITLE: Contribution to the Study of Surface Tension on the
Austenite Grain Boundaries 20

PERIODICAL: Hutnické listy, 1961, No.1, pp.41-49

TEXT: The surface energies of melts have been measured by numerous authors and adequate data are available. However, few measurements have been made of the surface tension of solid substances or at the grain boundaries. For steel, only the data published by Van Vlack (Ref.2) on the absolute values of the surface tension at the austenite grain boundaries are available. The views of Read and Schockley (Ref.3) on the properties of grain boundaries have been experimentally verified as a function of the grain orientation by a number of authors, for instance Dunn, Daniels and Bolton (Ref.4) and Aust and Chalmers (Ref.5). So far, no work has been published in Czechoslovakia on measuring the relative and absolute surface tension at the grain boundaries of steel. In this paper the results are published of measurements of the relative energy at the grain boundaries of two different phases (ferrite and Card 1/5

Z/034/61/000/001/007/021
E073/E535

Contribution to the Study of Surface Tension on the Austenite Grain Boundaries

austenite) and on the austenite grain boundaries. In the final part of the paper an attempt is made to determine the absolute surface tension of austenite by means of a modification of the Sears method (Ref.7). The relative values of the surface tension at the austenite-ferrite grain boundary for the isothermal decomposition temperature of 750°C, determined by means of statistical evaluation of the angles between individual grains measured in the plane of the polished section, were found to be: $\sigma_{\alpha\gamma} \approx 0.7 \sigma_{\gamma\gamma}$ and

$\sigma_{\alpha\delta} \approx 0.9 \sigma_{\gamma\gamma}$. For the interphase δ -ferrite-austenite, the following relations were found to apply for the temperature range 1000 to 1200°C: $\sigma_{\delta\gamma} \approx 0.83 \sigma_{\gamma\gamma}$ and $\sigma_{\gamma\delta} \approx 1.2$ to $1.4 \sigma_{\delta\delta}$.

Further statistical data were obtained and a critical analysis was made of the applied method of measuring the relative surface tension between two phases. The theoretical frequency curve for angles of 85° between grains was determined and this curve is compared with experimentally determined curves of frequencies with a modal value

Card 2/5

Z/034/61/000/001/007/021
E073/E535

Contribution to the Study of Surface Tension on the Austenite Grain Boundaries

of $\theta = 85^\circ$. The two curves were found to be in good agreement; the modal value of the angle determined experimentally is in agreement with the real angle between the two grains investigated. By means of vacuum etching of the surface of specimens, a method was developed of measuring the relative surface energy σ_{hr} between the austenite grains. The specimens were etched in the temperature range 1050 to 1100°C for durations of 48 hours, maintaining the vacuum at 3 to 5 x 10⁻⁴ mm Hg col. Furthermore, a method was developed for measuring the angles of "wrinkles" by the type MIS-11 profile meter and an evaluation was made of some of the data on a method of measurement and the shape of the wrinkles which form during vacuum etching. For soft carbon steel and two alloy steels (with 1% Cr and with 1% Cr + 1% Ni), the relative value $\sigma_{hr} = 0.6$ to 0.75 σ_v , which corresponds to an average value of the wrinkle angles of $\theta = 136$ to 145°. By means of the modified drop method, the absolute surface tension on the free austenite surface was determined, using spectrally pure lead as a standard material. The

Card 3/5

Z/034/61/000/001/007/021
E073/E535

Contribution to the Study of Surface Tension on the Austenite Grain Boundaries

experiments were carried out in a carefully purified atmosphere of argon and unsaturated lead vapours at 900°C for a duration of 4 hours. On the basis of the equilibrium of the surface tension vectors in the horizontal and vertical directions, the surface tension was determined under the above given conditions for two types of steel; for the soft carbon steel $\sigma_v = 1240$ dyn/cm and for the 30ChN2MA steel $\sigma_v = 1300$ dyn/cm. Furthermore, an analysis was made of the shape of the lead drops as determined in the transverse cross-section on the surface of the specimen during measurement of the σ_v values. Finally, the absolute surface tension at the grain boundaries on eliminating the influence of unsaturated lead vapours was tentatively calculated. The surface tension at the austenite grain boundaries at 1100°C was found to be about 800 dyn/cm for soft carbon steels. In evaluating the influence of lead vapours on the wrinkle angles, it was found that this influence is small and in the given case brings about a change of the wrinkle angles from 144.5 to 139°. So far, this quantity

Card 4/5

Z/034/61/000/001/007/021
E073/E535

Contribution to the Study of Surface Tension on the Austenite Grain
Boundaries

has not been measured on other alloys investigated but work on
this point is continuing. Some of the measurements were carried
out by Engineer Kašík, VUHŽ, Prague. There are 19 figures and
28 references: 5 Czech, 1 Soviet, 1 French, 1 German and 20 English. ✓

ASSOCIATION: Výzkumný ústav VŽKG, Ostrava (Research Institute
VŽKG, Ostrava)

SUBMITTED: June 17, 1960

Card 5/5

MAZANEC, Karel, inz., kandidat technických ved; KAMENSKA, Emilie, inz.

Examination of the effect of oxygen on surface stress. Hut listy
16 no.8:561-565 Ag '61.

1. Vyzkumny ustav, vitkovicke zelezarny Klementa Gottwalda.

18.8200

24115
Z/034/61/000/008/002/005
E073/E435

AUTHORS: Mazanec, Karel, Engineer and
Kamenska, Emilie, Candidate of Technical Sciences,
Engineer

TITLE: Study of the influence of oxygen on surface tension

PERIODICAL: Hutnické listy, 1961, No.8, pp.561-565

TEXT: A number of authors have expressed the view that an increased content of oxygen produced intergranular brittleness in steel. J. Plateau, G. Henry and C. Crussard (Ref. 2: Precipitation Processes in Steels; Iron and Steel Inst. Spec. Rep. No. 64, 1959, pp. 157-176) have pointed out that a relation may exist between intergranular brittleness and segregation of oxygen at the grain boundaries. In this paper, the authors investigate other causes of this brittleness. An attempt is made to determine more accurately the crystallographic relations pertaining to stripes on free surfaces, revealed after high-temperature etching at low pressures. Furthermore, certain views are expressed on the properties of fractures, since similar stripes were observed on fracture surfaces, particularly in cases of braked fractures in martensite when the fracture was

Card 1/5

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E073/E435

Study of the influence of ...

mostly along the grain boundaries. Under such conditions, the formation of stripes has not hitherto been observed. J.Bénard, J.Moreau and J.Plateau (Ref.6: Zeitsch. Electrochemie, 61, 1957, pp.59-65) explain the stripe formation by the fact that adsorption of oxygen reduces the surface energy, particularly on some crystallographic planes. This facilitates changes on the surface of the specimen caused by surface diffusion, enabling formation of non-uniformities corresponding to those planes where the surface energy is lowest. A certain analogy can be anticipated between the character of these striped surfaces and certain fracture surfaces which occur during intercrystalline fractures. In the case of grain boundaries, the probable cause of formation of stripes are oxygen atoms which are dissolved in the metal and can be adsorbed at the grain boundaries. The experiments were made on the steel 30ChN2MA produced in a 40 kg high-frequency laboratory furnace in such a way as to obtain an increased oxygen content (0.016%). After forging, the material was homogenized at 1000°C for one week. From this material, specimens were produced for studying the mutual orientations of the stripes and the crystallographic planes. After careful

Card 2/5

24145

Z/034/61/000/008/002/005

E073/E435

Study of the influence of ...

preparation of the surface of the polished specimens, these were vacuum-etched at 1050°C at a residual pressure of 3×10^{-3} to 1×10^{-3} mm Hg for durations of 2 - 48 hours. Under such conditions, no continuous oxygen layers formed on the specimens and oxygen was only adsorbed at the surface of the material. For comparison, the stripe-formation was also investigated after studying braked fractures. These test specimens were austenized at 1100°C for 1 hour and then water-quenched. After quenching, the specimens were loaded for 1 hour with a static stress of 60 kg/mm², corresponding approximately to 0.35 σ_p of the given steel after quenching. The braked fractures occurred after the load has been applied for 30 to 50 minutes. It was found that the stripes on the free surface were parallel to the planes {111} or {100}. The preferential etching of the plane {100} indicates that the adsorbed oxygen reduces the surface tension in this plane much more intensively than in the planes {111} which should have the lowest surface energy, since they have the densest atom population. The striping is attributed to a decrease in the surface energy. The gained energy forms the motive force of surface diffusion on the

Card 3/5

Study of the influence of ...

24115
Z/034/61/000/008/002/005
E073/E435

grain boundaries and brings about stripe formation at spots which are suitably oriented. It was found that a close relation exists between stripe-formation on the free surface and on fractures. An explanation is given why stripe formation is difficult to observe on fractures; it was observed for the first time on quenched steel during tests involving braked fractures and on soft carbon steels. J. Plateau et al (Ref.2) were not successful in detecting stripe formation in the Fe-O system by means of optical fractography. A direct relation exists between the adsorbed oxygen, the stripe-formation and the strength properties of the steel. In accordance with the theory of Griffith, a drop in the surface energy in the presence of adsorbed oxygen on the grain boundaries leads to a decrease in the critical size of cracks in intercrystalline fractures, i.e. to easier fracture. There are 11 figures, 1 table and 14 references: 6 Soviet-bloc and 8 non-Soviet-bloc. The references to English language publications read as follows: J. Plateau, G. Henry, C. Crussard: Iron and Steel Inst. Spec. Rep. No. 64, 1959, pp. 157-176; B. Chalmers, R. King, R. Shuttleworth, Proc. Roy. Soc. A 193 (1948) pp. 465-480; C. Andreade, R. F. Y. Randall, Proc. Phys. Soc. B 63, 1950, pp. 198-210.
Card 4/5

Study of the influence of ...

24115
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E073/E435

ASSOCIATION: Výzkumný ústav VŽKG (Research Institute VŽKG)

SUBMITTED: February 16, 1961

X

Card 5/5

MAZANEK, Karel, inz., kandidat technickych ved; KAMENSKA, Emilie, inz.

Contribution to the study of surface tension on austenite grain boundaries. Hut Hsty 16 no.1:41-49 Ja '61.

1. Vyzkumny ustav, Vitkovicke zelezarny Klementa Gottwalda, Ostrava.

MAZANEK, Karel, inz., kandidat technických ved; KAMENSKA, Emilie, inz.

Contribution to the study of braked fracture formation in the
martensite of high strength steel. Hut listy 17 no.3:202-209 Mr '62.

1. Vyzkumny ustav, Vitkovicke selezarny Klementa Gottwalda.

MAZANEC, K., inzh.; KAMENSKA, E., inzh.

Contribution to the determination of austenite surface tension.
Sbor VSB Ostrava 8 no.5:535-543 '62.

1. Vyzkumny ústav, Vitkovicke selezarny Klementa Gottwalda a
Vysoka skola banska, Ostrava.

L 59218-65 EPI(s)-2/EST(s)/EPP(n)-2/T/EMP(t)/EMP(b)/ENA(c) Pt-7/Pa-h IJP(s)
JL/AM/JS

ACCESSION NR: AP5015014

UR/0078/65/010/006/1312/1319
546 834'35-31

AUTHOR: Grizik, A. A. ; Plyushchev, V. Ye. ; Kamenskaya, A. N.

TITLE: Rubidium dizirconate

SOURCE: Zhurnal neorganicheskoy khimii, v. 10, no. 6, 1965, 1312-1319

TOPIC TAGS: rubidium dizirconate

L 59238-65

ACCESSION NR: AP6015014

bility, thermal stability, and the reactions of rubidium dizirconate with a series of reagents (methanol, methanol + water, other homologous alcohols). Methanol was found to be the best solvent for $\text{Rb}_2\text{O} \cdot 2\text{ZrO}_2$. The physicochemical properties and structure of rubidium dizirconate were determined, and the corresponding x-ray data are tabulated. Orig. art has 5 figures and 4 tables.

ASSOCIATION: None

Card

dm
2/2

KREYMER, G.S.; TUMANOV, V.I.; KAMENSKAYA, L.S.; LUTCHKO, Z. .

Strength limit and rupture mechanism of 40-50 percent metal
hard alloys under the effect of compression. Fiz. met. i
metalloved. 17 no.4:572-577 Ap '64. (MIRA 17:8)

1. Vsesoyuznyy institut tverdykh splavov.

SMIRNOV, F.F.; EYKHMAN, E.F.; KAMENSKAYA, D.S.; BRAKHMAN, L.A.; KISELEV, Ye.N.;
SEREBROVSKIY, V.B.

Cutting properties of high-strength hard alloys. Stan. Instr. 33
no.3:27-30 Mr '62. (MIRA 15:2)
(Metal-cutting tools)

I 23369-65 ENT(m)/EFF(n)-2/ENA(d)/ENP(t)/ENP(k)/ENP(b) Pf-2/Pu-4 MJM/D/JG
ACCK SIGN NR: AR5000740 5/0277/64/000/009/0020/0020

SOURCE: Ref. zh. Mashinostroitel'nyye materialy*, konstruktii i
raschet detaley mashin, Gidreprivod. Otd. vyyp., Abs. 9.48.122

AUTHOR: Kreymer, G. S.; Smirnov, F. F.; Kamenskaya, D. S.;
Fykhmans, E. F.

28
B

1961, 24-32
TOPIC TAGS: tungsten carbide, carbide tool, cutting tool, tantalum
containing alloy/ alloy T5K12V, alloy TT7K12

TRANSLATION: Results are reported of a study of the cutting
properties of hard alloys TT7K12 (tungsten carbide 81%, tantalum
carbide 3%, titanium carbide 4%, and cobalt 12%) and T5K12V (tungsten
carbide 83%, titanium carbide 5%, and cobalt 12%). Both alloys have
identical physical and mechanical properties (sigma, bond- 170-180

Core 1/2

1. 23389-65

ACCESSION NR: AR50007140

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kg/mm², HRA 87-88). In laboratory tests, a determination was made of the dependence of change in stability on cutting speed for different cutting cross sections under industrial conditions - the alloys were tested in different machining operations, and were compared with

Card 2/2

ACCESSION NR: AP4034055

8/0126/64/017/004/0572/0577

AUTHORS: Kreymer, G. S.; Tumanov, V. I.; Kamenskaya, D. S.; Pavlova, Z. I.

TITLE: On the resistance limit and the mechanism of failure of the metal ceramic solid alloy of WC and Co at compression

SOURCE: Fizika metallov i metallovedeniye, v. 17, no. 4, 1964, 572-577

TOPIC TAGS: resistance limit, yield stress, stress analysis, cobalt, carbide phase, dislocation effect, tungsten carbide

ABSTRACT: The purpose of this work was to obtain systematic experimental data on the effects of composition and carbide grain size on the resistance limit of the alloy WC-Co during compression. Five sets of alloys were prepared with varying sizes of carbide grains (1.4, 1.7, 1.9, 3.3, and 5.3 μ). In each set specimens were prepared containing varying percentages of cobalt. The different grain sizes were obtained by changing the initial temperature at which the powder was formed. The results showed that (with increasing cobalt content) the resistance limit increased initially and then decreased monotonically; all the curves reached

APPROVED FOR RELEASE: 08/10/2001
size of 1.4-1.7 μ was attained for 5% by wt (8.6% by vol) of cobalt in the alloy.

Card 1/3

ACCESSION NR: APL034055

The resistance limit is given by the theoretical expression

$$\sigma(S_T) = \frac{A}{\sigma^{1/2}} + B;$$

$$\sigma(S_T) = \frac{C}{\sigma^{1/2}} + D;$$

where σ is the resistance limit, S_T the yield limit, v the volumetric content of Co , and A, B, C, D are constants. The theoretical dependence of the resistance limit on the grain size is given by

$$\sigma_c \approx \frac{a}{d} + B';$$

$$\sigma_c \approx \frac{b}{d^{1/2}} + D'.$$

where d is the grain size and a, b, B', D' are constants. The form of the experimental curves agrees with these expressions. Finally, it was shown that these dependences were adequately described by the dislocation theory of E. Orowan (Symposium on Internal Stresses in Metals and Alloys, Inst. Metals, London, 1948) and of F. V. Lenel and G. S. Ansell (Powder Metallurgy. Proc. intern. Conference held in N.J., June 13-17, 1960, p.267). Orig. art. has: 7 formulas, 3 figures, and 1 table.

ASSOCIATION: Vsesoyuznyy institut tverdykh splavov (All Union Institute for Solid Alloys)

Card 2/3

ACCESSION NR: APL034055

SUBMITTED: 15 May 63

ENCL: 00

SUB CODE: MM

NO REF SOV: 006

OTHER: 009

Card 3/3

PETROV, K.M.; DYAKONOV, V.I.; FADEYEV, I.G.; SEMENENKO, P.P.; KRYUKOV, L.G.;
Prinimali uchastiye: PASTUKHOV, A.I.; SHISHKINA, N.I.;
PAZDNIKOVA, T.S.; CHIRKOVA, S.N.; KAREL'SKAYA, T.A.;; LOPTEV, A.A.;
DZEMYAN, S.K.; ISUPOV, V.F.; BELYAKOV, A.I.; GUDOV, V.I.;
SUKHMAN, L.Ya.; SLESAREV, S.G.; GOLOVANOV, M.M.; GLAGOLENKO, V.V.;
ISUPOVA, T.A.; ZYABLITSEVA, M.A.; KAMENSKAYA, G.A.; POMUKHIN, M.G.;
UTKINA, V.A.; MANEVICH, L.G.

Vacuum treatment of alloyed open hearth steel. Stal' 22 no.2:113-
117 F '62. (MIRA 15:2)

1. Ural'skiy nauchno-issledovatel'skiy institut chernykh metallov
(for Pastukhov, Shishkina, Pazdnikova, Chirkova, Karel'skaya,
Loptev, Dzemyan). 2. Metallurgicheskiy kombinat im. A.K. Serova
(for Isupov, Belyakov, Gudov, Sukhman, Slesarev, Golovanov,
Glagolenko, Isupova, Zyablitseva, Kamenskaya). 3. 6-y Gosudar-
stvennyy podshipnikovyy zavod (for Pomukhin, Utkina, Manevich).
(Steel—Metallurgy)
(Vacuum metallurgy)

KAMENSKAYA, G.V., inzh.

Small device for lighting stages. Svetotekhnika 7 no.3:25-26
Nr '61.

(MIRA 14:8)

1. Eksperimental'naya stsenicheskaya laboratoriya Moskovskogo
khudozhestvennogo akademicheskogo teatra SSSR imeni Gor'kogo.
(Stage lighting)

ZYAZEV, V.; KAMENSKAYA, A.; MALYSHEV, A.; SHUSTOV, A.

Using the system of closed circuits in organizing interurban freight
haulage. Avt.transp. 38 no.9:11-14 S '60. (MIRA 13:9)
(Transportation, Automotive)

Iron Ore Deposits (cont.)	207/2172
Material composition characteristics of the development of the magnetite of the Alap-dzhyaukaya district and their relationship to endogenous iron-ore formation	208
Structural regularities in the distribution of iron-ore regions	209
General structural characteristics of the Alap-dzhyaukaya district	210
Local characteristics of structural placement of iron-ore regions	211
Structural characteristics of iron-ore complexes and zones	212
Post-ore fissure tectonics and its effect on mining operations (S.S. Legin)	213
Ch. 5. Geological-geostatic Characteristics of Buzovskaya and Sedimentary-iron-ore Deposits	214
General characteristics of the Buzovskaya and Sedimentary-iron-ore deposits and its conditions (N. Zh. Salov)	215
Geostatic characteristics of sedimentary iron-ore deposits	216
Brief description of sedimentary iron-ore manifestations	217
Stratigraphic grouping of ore manifestations and types of iron-ore deposits	218
Space distribution of iron-ore deposits of different geostatic type in Northern Siberia	219
General industrial and possibilities evaluation of sedimentary-iron-ore deposits	220
Ch. 6. General Characteristics of the Magnetite Deposits in Gornaya Shoria, Kuznetskiy Alatau and Salair (P.A. Dyachenko, S.I. Lashin, Y. Ya. Kuznetsov, A.I. Makhomirov, A.S. Shubin)	221
XIII. Bibliography	222
AVAILABILITY: Library of Congress	223

34257

S/151/62/000/003/003/004
D040/D113

15.2240
1.4000

AUTHORS: Smirnov, F.F.; Eykhmans, E.F.; Kamenskaya, D.S.; Brakhman, L.A.;
Kiselev, Ye.N.; Serebrovskiy, V.B.

TITLE: The cutting properties of carbides of increased strength

PERIODICAL: Stanki i instrument, no. 3, 1962, 27-30

TEXT: Three new cutting alloys, developed by the Vsesoyuznyy nauchno-issledovatel'skiy institut tverdykh splavov (All-Union Scientific Research Institute of Hard Alloys) (VNIITS) for use when the cutting tools of standard carbides break down because of crumbling, are described. The composition of ~~TT~~ 7K12 (TT7K12), T5K12 B (T5K12V) and ~~TT~~ 7K15 (TT7K15) alloys, selected from many compositions after tests at VNIITS, NIITAvtoprom, TsNIITMASH and Uralmashzavod, is as follows (Table 1):

Card 1/4

34257

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D040/D113

The cutting properties

Alloy	Specific weight, g/cm ³	Hardness, RA	Chemical composition (%)			
			Titanium carbide	Tantalum carbide	Tungsten carbide	Cobalt
TT7K12	13.1	87-88	4	3	81	12
TT7K15	12.7-13.0	87-88	4	3	78	15
T5K12V	12.9-13.0	87-88	5	-	83	12

Cutting tests were conducted at the Uralmashzavod, Kolomenskiy teplovozostroitel'nyy zavod (Kolonna Diesel Locomotive Plant), Stankostroitel'nyy zavod im. Ordzhonikidze (Machine Tool Plant im. Ordzhonikidze), LIL, GAZ, Kramatorskiy zavod tyazhelogo mashinostroyeniya (Kramatorsk Heavy Machinery Plant), and the Elektrostal'skiy zavod tyazhelogo mashinostroyeniya (Electrostal' Heavy Machinery Plant). The results show that TT7K15 has the highest strength but only half the durability of TT7K12, and the T5K12V has almost the same cutting properties as

Card 2/4

34257

S/121/62/000/003/003/004

*040/p113

The cutting properties

TTK12 but lower wear resistance. Generally, the strength of the new alloys in cutting is considerably higher than that of the standard carbides **T5K10** (T5K10), **BK8** (VK8) or **BK11** (VK11) in cutting with deep cut. They proved good in heavy and intermittent cutting with relatively high cutting speed, and they are initially being used for planing large machine parts at the Kolonna Diesel Locomotive Plant, etc., as well as for planing large steel plates for dies at the Gor'kovskiy avtomobil'nyy zavod (Gor'kiy Automobile Plant). The following conclusions are drawn: (1) TTK12 and T5K12V alloys are basically used as substitutes for high-speed steel in rough turning, turning on wheels, planing, and other machining where the strength of standard carbides is not sufficient for dependable tool performance. In rough turning, they often can replace the T5K10 alloy, and the feed must then be raised 1.5 times or doubled, and the cutting speed slightly reduced. (2) The strength of TTK12 and T5K12V is mostly sufficient; since the TTK15 alloy is stronger and has a lower wear resistance, it would be better to use it only in difficult cases. (3) The use of the new alloys will have negative results in cases where the T5K10 alloy works without too much crumbling of the cutting edge and where any considerable increase in the cut depth is technically impossible or

Cont 3/4

34257

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000/013

The cutting properties

inexpedient. (4) The cutting capacity of the TT7KL and T5KLAV alloys is much higher than that of high-speed steel when the cut is deep, but the difference abruptly diminishes or even disappears in operation with low feed (of about 0.1 mm/rev). More experiments are necessary before it can be seen whether the new alloys ought to be used for shallow cutting. (5) In future, it is necessary to investigate whether the new alloys should be used for cutoff tools and complex-shaped cutters, to determine the effect of cutting tips of the new alloys on tools for materials difficult to cut, and to achieve stable cutting properties for the TT7KL and T5KLAV alloys. There are 3 tables and 6 figures.

X

Card 4/8

KAPENSKAYA, I. N.

"The Study of Streptococcal O and S of Hemolytic Streptococci
in Scarlet Fever." Cand Med Sci, Khar'kov State Medical Inst, Khar'kov,
1953. (RZhBiol, No 1, Sep 54)

SO: Sum 432, 29 Mar 55

KAMENSKAYA, I.N.

Plazentatsionnyy tsentr dlya issledovaniy

Species and type specificity of immunity in dysentery. Zhur.
mikrobiol., epidem. i immun. 27 no.3:22 Mr' 56. (MIRA 9:7)

1. Iz Khar'kovskogo instituta okhrany materinstva i mladenche-
stva imeni N.K.Krupskoy.

(DYSENTERY, BACILLARY, immunology.

species & type specificity in immunity in animals (Rus))

KUMENSKAYA, I.N.

USSR/Chemical Technology - Chemical Products and Their
Application. Treatment of Solid Mineral Fuels

I-7

Abs Jour : *Ref Zhur - Khimiya*, No 1, 1958, 2474

Author : *Kumenskaya, I.N., Polozov, V.F.*

Inst : All-Union Scientific Research Institute of Shale Processing.

Title : Chemical Composition of Generator Tar of Obshchiy Syrt Shale.

Orig Pub : *Tr. Vses. n.-i. in-ta po pererabotke slantsev*, 1956, No 5, 203-211

Abstract : A study was made of water-free, generator shale tar, deprived of polar and high-molecular compounds, of two of its fractions, boiling range up to 200° and 200-300°, and of the gas gasoline produced by gasification of the shale; the products under study were subjected to

Card 1/2

KOZHEVNIKOV, Aleksandr Vasil'yevich; KAMENSKAYA, I.N., kand.khim.nauk, red.;
PLATONOV, R.K., kand.khim.nauk, retsenzent; DOLMATOV, P.S.,
vedushchiy red.; YASHCHURZHINSKAYA, A.B., tekhn.red.

[Heavy liquid fuels for gas turbines] Tiazheloe zhidkoe toplivo
dlia gazovykh turbin. Leningrad, Gos. nauchno-tekhn.isd-vo neft.
i gorno-toplivnoi lit-ry, Leningr. otq-nie, 1958. 136 p.

(MIRA 12:2)

(Liquid fuels)

(Gas turbines)

KAMENSKAYA, I.N.; FEOFILOV, Ye.Ye.

Group composition of producer gasoline. Khim. i tekhn. gor.
slan. i prod. ikh perer. no.8:237-250 '60. (MIRA 15:2)
(Gasoline--Analysis)
(Oil shales)

EPSHTEYN-LITVAK, R.V.; DMITRIYEVA-RAVIKOVICH, Ye.M.; D'YAKOVA, Ye.I.;
KAMENSKAYA, I.N.; VIL'SHANSKAYA, F.L.; KAPZOLKINA, N.S.

Theoretical bases of dysenterial immunity. Zhur. mikrobiol. epid. i
immun. 32 no.6:18-25 Je '61. (MIRA 15:5)

1. Iz Moskovskogo instituta epidemiologii, mikrobiologii i gigiyeny.
(DYSENTERY) (IMMUNITY)

EPSHTEYN-LITVAK, R.V.; DMITRIYEVA-RAVIKOVICH, Ye.M.; D'YAKOVA, Ye.I.;
KAMEISKAYA, I.N.; FIL'SHANSKAYA, F.L.

Ways for improving dysenterial vaccines and calculating their
effectiveness. Zhur. mikrobiol., epid. i immun. 33 no.1:22-28
Ja '62. (MIRA 15:3)

1. Iz Moskovskogo instituta epidemiologii i mikrobiologii.
(DYSENTERY) (VACCINES)

KAMENSKAYA, I. P.

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no.4:29-32 Ap '60. (MIRA 13:6)

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g.Tula.

(Tula Province--Public health)

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snow walls. Izv. SO AN SSSR no. 10:105-113 '65
(MIRA 19:1)

1. Sibirskiy nauchno-issledovatel'skiy institut energetiki,
Novosibirsk. Submitted October 17, 1964.

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zav.; tsvet.net. 8 no.2:58-64 '65.

(MIRA 19:1)

1. Gornometallurgicheskiy institut Kol'skogo filiala AN SSSR.
Submitted December 24, 1963.

KAMENSKAYA, L.N.

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Ros.Feder. 4 no.2:43-45 P '60. (MIRA 13:5)

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(TULA PROVINCE--HEALTH EDUCATION)

KAMENSKAYA, L. P.

"The Practice of Conducting Range-Finder Field Tests and Methods of Mathematical Treatment of the Test Results." Cand Tech Sci, Moscow Inst of Engineers of Geodesy, Aerial Photography, and Cartography, 19 Nov 54. (VI, 9 Nov 54)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (11)

SO: Sum. No. 521, 2 Jun 55

KAMENSKAYA, L.P., kandidat tekhnicheskikh nauk.

Calculating the common error of a series of measurements of one
quantity on the basis of errors of individual groups of measurements.
Geod.i kart. no.7:31-36 S '56. (MLRA 9:11)

(Errors, Theory of) (Geodesy)

COMMON ELEMENTS		PERCENTAGE INDEX	
<p>KAMENSKAYA, M. A.</p> <p>CA</p> <p>Potassium sulfate and hydrochloric acid. Vsesoyuznyy Nauchnyy Institut po Udobreniyam imeni professora Samoilova (M. A. Kamenskaya and S. I. Vol'fkovich, inventors). Russ. 37,070, June 30, 1934. KCl mixed with metallurgical slag and (or) the slag produced in the manuf. of P is treated with SO_2 and air.</p>		<p>18</p>	
<p>ASB-5LA METALLURGICAL LITERATURE CLASSIFICATION</p>			
<p>SEARCHED</p>		<p>INDEXED</p>	
<p>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100</p>		<p>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100</p>	

KAMENSKAYA, M. [A]																									
<p>Alkyl- and aryl-substituted ortho esters of silicic acid. III. Synthesis of allyltriethoxysilane. K. Andrianov and M. Kamenskaya. <i>J. Gen. Chem.</i> (U. S. S. R.) 8, 900-71 (1938); cf. <i>C. A.</i> 32, 7802².—The prepn. by the previous method of an allyltriethoxysilane with an unsatd. radical in the absence of Et_2O was studied. The condensation of allyl bromide and chloride with $(\text{EtO})_2\text{Si}$ in the presence of Mg gave 56.1 and 60% $\text{CH}_2=\text{CHCH}_2\text{Si}$ $\text{Et}(\text{OR})_2$, resp., b. 172-8°, d_4^{20} 0.8220, n_D^{20} 1.3962, M. R. 61.67 (calcd. 62.84) Chas. Blanc</p>																									
<p>ASH-SLA METALLURGICAL LITERATURE CLASSIFICATION</p>																									

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Sympathetic effect on the skeletal muscle and neuromuscular syn-
apsis as related to the frequency of tetanic stimulation. Dokl.
AN SSSR 162 no.2:475 My '65. (MIRA 18:5)

1. Moskovskiy gosudarstvennyy universitet. Submitted December 31,
1964.

KAMENSKAYA, M. A.

inlidoformaldehyde resin. K. A. Andrianova, O. I. Gribanov, and
M. A. Kamenskaya. U.S.S.R. #4,526, April 30, 1945. A fat acid, or
a mixt. of fat acid and vegetable oil, is treated with PhNH_2 , and the
product condensed with CH_2O , or the acid is condensed with CH_2O ,
and the condensation product treated with PhNH_2 .

M. Mosch

KAMENSKAYA, M.A.; KIRZON, M.V.

Significance of the summation process for the development of
carnosine effect on the skeletal muscle in fatigue. Nauch.
dokl. vys. shkoly; biol. nauki no.2:43-48 '65.

(MIRA 18:5)

1. Rekomendovana kafedroy fiziologii zhivotnykh Moskovskogo
gosudarstvennogo universiteta im. M.V. Lomonosova.

NESTERENKO, A.I.; KAMENSKAYA, M.I.

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Index of dissertations on surgery and allied subjects, defended
in 1953-1955. Vest. khir. 77 no.1:149-151 Ja '56 (MIRA 9:5)

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(BIBLIOGRAPHY--MEDICINE)

NESTERENKO, A.I.; KAMENSKAYA, M.I.

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147-154 Mr '56. (MLRA 9:7)

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149-153 Ap '56. (MIRA 9:8)
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NESTERENKO, A.I.; KAMENSKAYA, M.I.

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77 no.5:147-155 My '56. (MLRA 9:8)
(SURGERY,
bibliogr. (Rus))

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KAMENSKAYA, M.I.; KAMENSKAYA, M.I.

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152-155 Ja '57. (MLBA 10:3)

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NESTERENKO, A.I.; KAMENSKAYA, M.I.

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khir. 79 no.8:149-154 Ag '57. (MIRA 10:10)
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80 no.2:153-157 F '58. (MIRA 11:3)
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NESTERENKO, A.I.; KAMENSKAYA, M.I.

Dissertations on surgery and related problems defended in 1956-1957.
Vest.khir. 81 no.12:126-135 D '58. (MIRA 12:2)
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Dissertations on surgery and related problems presented during
1957-1958. Vest. khir. 84 no. 2:154-158 contd F '60. (MIRA 14:1)
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NESTERENKO, A.I.; KAMENSKAYA, M.I.

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defended in 1958-1960. Vest.khir. no.6:132-140 '62. (MIRA 15:11)
(BIBLIOGRAPHY--SURGERY)

NESTERENKO, A.I., KAMENSKAYA, M.I.

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NESTERENKO, A.I.; KAMENSKAYA, M.I.

Dissertations on surgery and problems in related specialties
defended in 1958-1960; second part. Vest.khir. 89 no.7:156-
158 J1 '62. (MIRA 15:8)

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NESTERENKO, A.I.; KAMENSKAYA, M.I.

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through 1960 (conclusion). Vestn. khri. Grekov. 90 no.4:152-158
Ap'63 (MIRA 17:2)

NESTERENKO, A.I.; KAMENSKAYA, M.I.

Dissertations on surgery and problems in related disciplines defended during 1961-1962, Vest. khir. 93 no.9:148-151 S '64. (MIRA 18:4)

NESTERENKO, A.I.; KAMENSKAYA, M.I.

Dissertations on surgery and on problems of related specialties published in 1961 - 1962. Vest. khir. 93 no.8:142-144 Ag '65.
(MIRA 18:7)

16(1)

AUTHOR: Kamenskaya, M.M.

06308

SOV/8140-59-6-9/29

TITLE: Solvable Lie Standard Algebras.I

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Matematika, 1959,
Nr 6, pp 58-71 (USSR)

ABSTRACT: A zero algebra is called complete if its orthogonal complement is its normalizer. According to G.B.Gurevich [Ref 2] a linear Lie algebra is called a Lie standard algebra if its normalizer is identical with the normalizer of a complete zero algebra. In the present paper the author determines the center Z_B , the commutant $[B^2]$ and the differentiation algebra A_B for an arbitrary solvable Lie standard algebra B being no zero algebra. Under consideration of numerous single cases the results are formulated in three theorems.
There are 5 Soviet references.

ASSOCIATION: Kaluzhskiy gosudarstvennyy pedagogicheskiy institut (Kaluga State Pedagogical Institute)

SUBMITTED: June 27, 1958

Card 1/1

SUDAKOV, S.G.; ALEKSANDROV, T.F.; BAGROV, M.A.; BULANOV, A.I.; KAMENSKAYA, M.V.;
KUZ'MIN, B.S.; LITVINOV, B.A.; SINYAGINA, M.I.; TIMOFEEV, A.A.; KUTIN, I.I.;
SINYAGINA, V.I.

[Instructions for class I, II, III and IV leveling] Instruktسيا po
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lit-ry, 1955. 106 p. (MIRA 9:3)

1. Russia (1923- U.S.S.R.) Glavnoye upravleniye geodesii i kartografii.
(Leveling)

Andreyev, M. K. - 1957
SUDAKOV, S.G.; ALEKSANDROV, T.F.; BAOROV, M.A.; BULANOV, A.I.; KAMENSKAYA,
M.V.; KUZ'MIN, B.S.; LITVINOV, B.A.; SINYAGINA, M.I.; TIMOFEYEV, A.A.;
KENTIN, I.I.; pri uchastii Sinyaginoy, V.I.; BULANOV, A.I., red.;
ROMANOVA, V.V., tekhn.red.

[Instructions for first, second, third and fourth class leveling]
Instruktsiia po nivelirovaniu I, II, III i IV klassov. Izd. 2-oe,
ispr. i dop. Moskva, Izd-vo geodez. lit-ry, 1957. 106 p.

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(Leveling)

SUDAKOV, S.G.; ALEKSANDROV, T.F.; BAGROV, M.A.; BULANOV, A.I.; KAMENSKAYA, M.V.; KUZ'MIN, B.S.; LITVINOV, B.A.; SINYAGINA, M.I.; TIMOFEYEV, A.A.; ENTIN, I.I.. Primala uchastiye SINYAGINA, V.I.. ROMANOVA, V.V., tekhn.red.

[Instructions for first-, second-, third-, and fourth-order leveling]
Instruktsiia po nivelirovaniu I, II, III i IV klassov. Izd.3, ispr.
i dop. Moskva, Izd-vo geod.lit-ry, 1959. 111 p. (MIRA 13:3)

1. Russia (1923- U.S.S.R.) Glavnoye upravleniye geodesii i karto-
grafii.

(Leveling--Handbooks, manuals, etc.)

SUDAKOV, S.G.; ALEKSANDROV, T.F.; BAGROV, M.A.; BULANOV, A.I.;
KAMENSKAYA, M.V.; KUZ'MIN, B.S.; LITVINOV, B.A.; SINYAGINA,
M.I.; TIMOFEYEV, A.A.; ENTIN, I.I. Prinimal uchastiye
SINYAGINA, V.I.; KOMAR'KOVA, L.M., red.izd-va; ROMANOVA,
V.V., tekhn. red.

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struktsiia po nivelirovaniu I, II, III, i IV klassov. 4 izd.
dop. i ispr. Moskva, Gosgeoltekhizdat, 1963. 110 p.

(MIRA 16:6)

1. Russia (1923- U.S.S.R.) Glavnoye upravleniye geodezii i
kartografii.

(Leveling)

RAEDENBERG, A. L.

Aorta

Morphology of the endothelium of thoracic
aorta in man
Dokl. AN SSSR 83 no. 5, April 1952
Voenno-Meditsinskaya Akademiya, im. S. M. Kirova
recd. 14 Nov. 1952

SO: Monthly List of Russian Accessions, Library of Congress, August 1952² Uncl.

KAMENSKAYA, N.L.

Morphology of the aortal endothelium in children. Dokl.AN SSSR 93 no.3:535-
538 N '53. (MLRA 6:11)

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N.N.Anichkovym. (Endothelium) (Aorta)

KAMENSKAYA, N.L.

USSR/ Medicine - Histology

Card 1/1 Pub. 22 - 42/49

Authors : Kamenskaya, N. L.

Title : Certain characteristics of the wall structure of kidney arteries and veins

Periodical : Dok. AN SSSR 100/5, 1001-1004, Feb 11, 1955

Abstract : Histological data are presented regarding the wall structure of human and animal kidney arteries and veins. Seven references: 3 USSR and 4 German (1871-1950). Drawings.

Institution : The S. M. Kirov Military-Medical Academy

Presented by: Academician N. N. Anichkov, November 16, 1954

KAMENSKAYA, N. L.

Structure of the Endothelial structure of the renal arteries and
veins. Dokl. AN SSSR 103 no.3:495-498 J1'55. (MLRA 8:11)

1. Voenno-meditsinskaya akademiya im. S.M.Kirova. Predstavleno
akademikom Ye.N.Pavlovskim
(KIDNEYS, BLOOD SUPPLY,
arterial & venous endothelium, structure)

KAMENSKAYA, N.I.

Endothelium of the embryonic aorta in humans. Dokl. AN SSSR
110 no.6:1096-1099 0 '56. (MLBA 10:2)

1. Voenno-meditsinskaya akademiya imeni S.M. Kirova.
Predstavleno akademikom Ye.N. Pavlovskim.
(ENDOTHELIUM) (EMBRYOLOGY, HUMAN)

KAMENSKAYA, N.L., (Leningrad, V.O., 10 liniya, d.15-b, kv.18)

Data on histogenesis of the human aorta. Arkh. anat. gist. i embr.
36 no.4:61-66 Ap '59. (MIRA 12:7)

1. Laboratoriya eksperimental'noy morfologii (zav. - deystv. chlen
AMN SSSR prof. N. G. Khlopin) Instituta onkologii AMN SSSR.
(AORTA, embryol.
histogenesis (Rus))

KAMENSKAYA, N.L. (Leningrad, V.O., 10-ya liniya, 15b, kv.18); NIKIFOROVA,
Ye.N.

Endothelium of the dilated and contracted aorta. Arkh. anat. gist.
i embr. 38 no. 5:76-80 My '60. (MIRA 14:2)

1. Laboratoriya eksperimental'noy morfologii (zav. - deystvitel'nyy
chlen AMN SSSR prof. N.G. Khlop'in) Instituta onkologii AMN SSSR.
(AORTA)

KHLOPIN, N.G. [deceased]; KAMENSKAYA, N.L.

Morphology of the vessels of skin hemangiomas in children in connection with the problem of the tissue nature of vascular epithelium. Arkh.anat., gist i embr. 43 no.7:68-74 J1 '62. (MIRA 15:9)

1. Laboratoriya eksperimental'noy morfologii (zav. - deystvitel'nyy chlen AMN SSSR N.G.Khlopin [deceased]) Instituta onkologii AMN SSSR.
(SKIN—TUMORS) (ANGIOMA) (EPITHELIUM)

BERLIN, L.B.; KAMENSKAYA, N.L.

Histologic changes in chicken epidermis in reparative regeneration.
Dokl. AN SSSR 149 no.2:428-430 Mr '63. (MIRA 16:3)

1. Voenno-meditsinskaya akademiya im. S.M.Kirova. Predstavleno
akademikom N.N.Anichkovym.
(Epidermis) (Regeneration (Biology))

ZELIKIN, M.B., kand. tekhn. nauk; VISHNEVSKIY, A.N., kand. tekhn. nauk;
Prinimali uchastiye: PANFILOVA, M.L., mladshiy nauchnyy sotrudnik;
SYTNIK, L.V., mladshiy nauchnyy sotrudnik; KAMENSKAYA, N.P., mlad-
shiy nauchnyy sotrudnik; MAYSTRENKO, G.S., mladshiy nauchnyy so-
trudnik

Preparation of silica white using liquors from the soda manufacture.
[Trudy] NIOKHIM 15:3-11 '63. (MIRA 18:2)

ZELIKIN, M.B., kand. tekhn. nauk; SYTNIK, L.V.; KAMENSKAYA, N.P.

Preparation of silica white by the action of hydrogen chloride on a sodium silicate solution. Report No.1. [Trudy] NIOKHIM 15: 12-18 '63.

Determination of the specific surface of silica white based on the adsorption of a dye. Ibid.:97-100

(MIRA 18:2)

14-57-7-14642
Translation from: Referativnyy zhurnal, Geografiya, 1957, Nr 7,
pp 59-60 (USSR)

AUTHORS: Shvets, M. Ye., Kamenskaya, O. A.

TITLE: A Method for Determining the Lower Border Altitude of
Intramass Stratified Clouds (O metode opredeleniya
vysoty nizhney granitsy vnutrimassovykh sloistyykh
oblakov)

PERIODICAL: Tr. Leningr. gidrometeorol. in-ta, 1956, Nrs 5-6,
pp 201-207

ABSTRACT: The authors examine the position of the condensation
level in light of the proposition that heat and moisture
transfer is brought about not only by vertical move-
ment but also by turbulent exchange. Using the
equations for water vapor transfer and for heat ab-
sorption by dry air, they derived an equation for the
transfer of humidity deficiency. The equation for

Card 1/3

14-57-7-14642

A Method for Determining the Lower Border (Cont.)

the altitude of condensation level is first derived, with the element of turbulent exchange left out of the calculations; it is noted that, under this condition, the equation gives low altitude values, because turbulent exchange equalizes the moisture deficiency and raises the altitude at which the deficiency becomes zero. The authors also derive an equation for the altitude of condensation level, taking the turbulent exchange into account. The results of their calculations are represented graphically. The altitude of condensation level is determined from the amount of relative humidity, the temperature at the earth's surface T_0 , and the magnitude of α/D , where

$$\alpha = \frac{\gamma - g/R}{L/AR_w T - 1} + \gamma_a,$$

Here γ is the vertical temperature gradient, γ_a is the adiabatic gradient, g is acceleration of gravity, R and R_w are constants
Card 2/3

A Method for Determining the Lower Border (Cont.)

14-57-7-14642

for air and water vapor, A is the thermal equivalent of the work, T is temperature at the condensation level, and D is the coefficient of turbulent exchange. When the value of T_0 is constant, the altitude H of condensation level is determined by the equation

$$H/(1-r) = f(\alpha/D).$$

The condensation level rises as the value of T_0 increases, and falls as the temperature gradient increases.

Card 3/3

A. B.

AMINOVA, R.Kh., kand. ist. nauk; TETENEVA, L.G., kand. ist. nauk;
ALIMOV, I.A.; DMITRIYEV, G.L.; DZHAMALOV, O.B., doktor
ekon. nauk, redaktor ; DZHURAYEVA, T., kand. ist. nauk,
red.; ATFENYUK, S.Ya., red.; DANILOV, V.P., glav. red.;
BELOV, G.A., red.; GRIGOR'YAN, L.L., red.; IBRAGIMOV, Z.I.,
red.; IVNITSKIY, N.A., red.; IL'YASOV, S.I., red.; KAKABAYEV,
S.D., red.; KAMENSKAYA, N.V., red.; KRAYEV, M.A., red.;
KULIYEV, O.R., red.; MAKHARADZE, N.B., red.; OBICHKIN, G.D.,
red.; PLESHAKOV, S.T., red.; RADZHABOV, Z.I., red.; SELEZNEV,
M.S., red.; TURSUNBAYEV, A.B., red.; FEDOROV, A.G., red.;
SHEPELEVA, T.V., red.; PATLAKH, B., red.; MASHARIPOVA, D.,
red.; BULATOVA, R., red.; GOR'KOVAYA, Z.P., tekhn. red.;
KARABAYEVA, Kh.U., tekhn. red.

[Socialist reorganization of agriculture in Uzbekistan]
Sotsialisticheskoe pereustroistvo sel'skogo khoziaistva v Uz-
bekistane, 1917-1926 gg. Pod red. O.B.Dzhamalova. Tashkent,
Izd-vo Akad. nauk UzSSR. Vol.1. 1962. 792 p. (MIRA 16:5)

1. Akademiya nauk Uzbekskoy SSR, Tashkent. Institut istorii i
arkheologii.

(Uzbekistan--Agriculture)

S/138/60/000/011/005/010
A051/A029

AUTHORS: Eytngon, I. I., Karmin, B. K., Zhakova, V. G., Betts, G. E.,
Kamenskaya, S. A.

TITLE: Mastication of Natural Rubber in the Presence of Para-
Tertiary Butylphenolmercaptane, Dimethylphenylparacresolmer-
captane, Their Zinc Salts and Disulfides

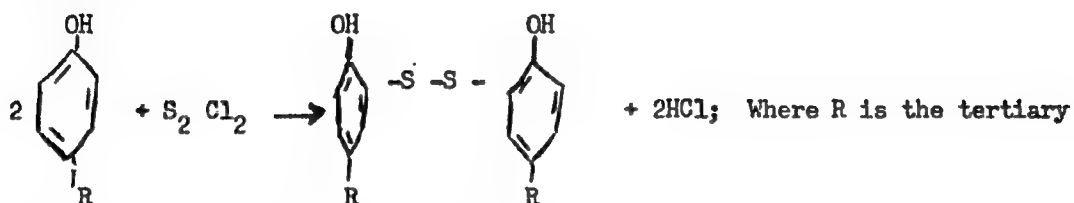
PERIODICAL: Kauchuk i rezina, 1960, No. 11, pp. 21-24

TEXT: The results are given of work carried out on the synthesis and study of paratertiary butylphenolmercaptane, dimethylphenylparacresolmercaptane, their zinc salts and disulfides, as accelerators of natural rubber mastication. The method for producing the listed accelerators is outlined and a characteristic evaluation of these is given. Corresponding disulfides were used as the initial products for producing substituted arylmercaptanes. Both products under investigation were obtained by reacting sulfur monochloride with paratertiary butylphenol and dimethylphenylparacresol. The reaction is given as:

Card 1/5

S/138/60/000/011/005/010
A051/A029

Mastication of Natural Rubber in the Presence of Para-Tertiary Butylphenolmercaptane, Dimethylphenylparacresolmercaptane, Their Zinc Salts and Disulfides



butyl- or dimethylbenzyl. The reaction was carried out in a solution of dichloroethane at its boiling point. Sulfur monochloride was added gradually, mixing for 2 hours. At the end of the reaction the dichloroethane was distilled off and the product obtained dried in a vacuum at a temperature of 40-50°C until a constant weight was achieved. The disulfide yields were 82 and 87% of the theoretical, respectively. The obtained products, which were resin-like substances, were subjected to an elementary analysis. The results were: for

Card 2/5

S/138/60/000/011/005/010
A051/A029

Mastication of Natural Rubber in the Presence of Para-Tertiary Butylphen-
clmercaptane, Dimethylphenylparacresolmercaptane, Their Zinc Salts and
Disulfides

	C	H	S
$C_{20}H_{26}O_2S_2$			
calculated.....	66.26	7.23	17.68
found	66.67	7.36	17.02
$C_{30}H_{30}O_2S_2$			
calculated.....	74.07	6.17	13.16
found	74.40	5.99	12.81

The results showed that the synthesized substances correspond to disulfide of parateritary butylphenol and disulfide dimethylphenylparacresol. In order to obtain corresponding mercaptanes from the disulfides the reduction method was used with glucose and alkali hydroxide in an alcohol-aqueous medium (Ref. 3). Results of an analysis of the zinc content in the zinc salt of the corresponding mercaptane proved that sodium mercaptide and not phenolate is formed when reducing the disulfides with glucose and a calculated quantity of alkali hydroxide. The mercaptane yield was 90 and

Card 3/5

S/138/60/000/011/005/010
A051/A029

Mastication of Natural Rubber in the Presence of Para-Tertiary Butylphenolmercaptane, Dimethylphenylparacresolmercaptane, Their Zinc Salts and Disulfides

97% of the theoretical, respectively. Zinc salts of the paratertiary butylphenolmercaptane and dimethylphenylparacresolmercaptane were obtained from the respective sodium mercaptides formed in the process of the disulfide reduction. The yield of the commercial product was 96% of the theoretical. The zinc content for the $C_{20}H_{26}O_2S_2Zn$ was calculated to be 15.2% and found experimentally as 14.7%. The authors point out that they were first to obtain the mercaptanes of the paratertiary butylphenol and dimethylphenylparacresol, their zinc salts and also dimethylphenylparacresol disulfide. A study was carried out of the action of the paratertiary butylphenolmercaptane, dimethylphenylparacresolmercaptane and their derivatives on the mastication of natural rubber. Fig. 1 shows the effect of various doses of mastication accelerators on natural rubber processing on rollers, and Fig. 2 the kinetics of mastication at 100°C. Data on the effect of temperature on the mastication on rollers are given in Fig. 3. The tested substances form the following decreasing series according to

Card 4/5

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A051/A029

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their effectiveness on the mastication process: paratertiary butylphenolmercaptane, dimethylphenylparacresolmercaptane>zinc salts>disulfides. The greater activity of the mercaptane as compared to the zinc salts, etc., corresponds with data obtained previously by the authors in studying trichlorothiophenol, pentachlorothiophenol, orthobenzamide thiophenol and their derivatives (Ref. 1,2). It was further found that the mastication of natural rubber in the presence of paratertiary butylphenolmercaptane, dimethylphenylparacresolmercaptane, their zinc salts and disulfides is hardly effective on the tendency of the breaker mixtures to scorching, or on the vulcanization rate and physico-mechanical properties of their vulcanizates. The authors state in conclusion that for industrial application only the zinc salts of mercaptanes are of interest, since mercaptanes are toxic and easily decompose when stored, and the disulfides have a resin-like consistency. There are 3 sets of graphs, 1 table and 3 references: 2 Soviet and 1 German.

ASSOCIATION: Nauchno-issledovatel'skiy institut shinnoy promyshlennosti (Scientific Research Institute of the Tire Industry)

Card 5/5

ACCESSION NR: AP4045700

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AUTHOR: Eytingon, I. I.; Borodushkina, Kh. N.; Kamenskaya, S. A.; Tikhacheva, Ye. P.

TITLE: Possible use of dimethylaminomethyl phthalimide as a secondary accelerator of vulcanization

SOURCE: Kauchuk i rezina, no. 9, 1964, 25-27

TOPIC TAGS: vulcanization, accelerator, dimethylaminomethyl phthalimide, diphenylguanidine, phthalic anhydride, N-nitrosodiphenyl amine, cushion rubber, tread rubber, tire manufacture, vulcanization accelerator / Altax, Captax, Santocure

ABSTRACT: Dimethylaminomethylphthalimide (AMP, b.p. 76-77C) was synthesized by the reaction of phthalimide with formalin and dimethylamine, after which it was combined with Captax, Altax and Santocure and tested in mixtures based on natural and butadiene-styrene rubbers. The tabulated data for unfilled mixtures of natural rubber containing AMP and Altax are compared with the data obtained for analogous mixtures with Altax and diphenylguanidine (DPG). It was found that AMP is a secondary accelerator of vulcanization of rubber mixtures, although with a lower activity than that of DPG. The necessary increase in AMP content results in a much smaller tendency to pre-vulcanization. Vulcanized rubbers containing di-

Card 1/2

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methylaminomethylphthalimide have characteristics (tensile strength, elongation, hardness, aging) equivalent to those of vulcanized rubbers containing diphenylguanidine except for the modulus of elasticity, which is somewhat higher. For some mixtures, AMP can completely replace diphenylguanidine and phthalic anhydride or N-nitrosodiphenyl amine. The experimental data for natural cushion rubbers (with 25 parts by weight of furnace gas black and 15 parts by wt. of channel black for 100 parts of rubber) and for tread rubbers (containing 50 parts by wt. of Khas furnace black for 100 parts by wt. of rubber) based on butadiene-styrene with different amounts of components (Altax, Santocure and AMP) are tabulated and compared. The variation in properties depending on the amount of accelerators is discussed. "T. Gendler took part in the experimental work." Orig. art. has: 4 tables and 1 structural formula.

ASSOCIATION: Nauchno-Issledovatel'skiy Institut shinnoy promyshlennosti (Scientific Research Institute of the Tire Industry); Dnepropetrovskiy shinnyy zavod (Dnepropetrovsk Tire Plant)

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Card 2/2

EYTINGON, I.I.; FEL'DSHTEYN, M.S.; LEVITIN, I.A.; KAMENSKAYA, S.A.

Investigating some phthalimide derivatives as preventers of premature vulcanization of rubber compounds. Kauch. i rez. 22 no.11:20-23 N '63. (MIRA 17:2)

1. Nauchno-issledovatel'skiy institut shinnoy promyshlennosti i Moskovskiy shinnyy zavod.

EYTINGON, I.I.; BORODUSHKINA, Kh.N.; KAMENSKAYA, S.A.; TIKHACHEVA, Ye.P.

Possibility of using dimethylaminomethyl phthalimide as a
secondary accelerator of vulcanization. Kauch. i rez. 23 no.9:
25-27 S '64. (MIRA 17:11)

1. Nauchno-issledovatel'skiy institut shinnoy promyshlennosti i
Dnepropetrovskiy shinnyy zavod.